

WHAT IS CLAIMED IS:

1. An apparatus for electrical cardiac pacing, the apparatus comprising:
leads for applying electrical stimulation to a cardiac blood pool; and
stimulation generator connected to the leads, wherein the stimulation generator
produces a biphasic electrical waveform to stimulate the cardiac blood pool via the leads
to effect cardiac pacing, the electrical waveform comprising:

a first stimulation phase with a first phase polarity, a first phase amplitude,
a first phase shape and a first phase duration; and

a second stimulation phase with a second phase polarity, a second phase
amplitude, a second phase shape and a second phase duration;
wherein the first phase polarity is positive.

2. The apparatus for electrical cardiac pacing of claim 1, wherein the first
stimulation phase and the second stimulation phase are applied in sequence to the cardiac
blood pool.

3. The apparatus for electrical cardiac pacing of claim 1, wherein the first phase
amplitude is at a maximum subthreshold amplitude.

4. The apparatus for electrical cardiac pacing of claim 3, wherein the maximum
subthreshold amplitude is about 0.5 to 3.5 volts.

5. The apparatus for electrical cardiac pacing of claim 1, wherein the first phase
duration is at least as long as the second phase duration.

6. The apparatus for electrical cardiac pacing of claim 1, wherein the first phase
duration is about one to nine milliseconds.

7. The apparatus for electrical cardiac pacing of claim 1, wherein the second phase
duration is about 0.2 to 0.9 milliseconds.

8. The apparatus for electrical cardiac pacing of claim 1, wherein the second phase
amplitude is about two volts to twenty volts.

9. The apparatus for electrical cardiac pacing of claim 1, wherein the first stimulation phase is initiated greater than 200 milliseconds after completion of a cardiac beating cycle.

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